No. 8900204

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ferry-Morse Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'Enduro'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 31st day of August in the year of our Lord one thousand nine hundred and ninety-two.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Edward Madigan
Secretary of Agriculture

APPROVAL EXPIRES 2-28-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)
FERRY-MORSE SEED COMPANY

2. TEMPORARY DESIGNATION
FM40338

3. VARIETY NAME
ENDURO

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
555 CODONI
P.O. BOX 4938
MODESTO, CALIFORNIA 95352

5. PHONE *(Include area code)*
209/579-7333

FOR OFFICIAL USE ONLY

PVPO NUMBER
8900204

6. GENUS AND SPECIES NAME
Lycopersicon esculentum Mill.

7. FAMILY NAME *(Botanical)*
Solanaceae

FILING
DATE May 8, 1989
TIME
☐ A.M. ☐ P.M.

8. KIND NAME
TOMATO

9. DATE OF DETERMINATION
MAY 1988

FEES RECEIVED
AMOUNT FOR FILING
$ 1800.00 + 350.00
DATE
May 8, 1989; May 22, 1989
AMOUNT FOR CERTIFICATE
$ 250.00
DATE
July 20, 1992

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
CORPORATION

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
CALIFORNIA

12. DATE OF INCORPORATION
7 APRIL 1969

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
DAVID J. THOMPSON
FERRY-MORSE SEED COMPANY
P.O. BOX 4938
MODESTO, CALIFORNIA 95352
PHONE *(Include area code)*: 209/579-7333

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
- a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
- d. ☒ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ Yes ☒ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
N/A
☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date)*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
(USA) - WILL APPEAR IN APRIL 1989 FERRY-MORSE PRICE LISTS
(USA) - ONE COMMERCIAL SALE MADE DECEMBER 1988
☒ Yes *(If "Yes," give names of countries and dates)*
☐ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
David J. Thompson
DATE
17 APRIL 1989

SIGNATURE OF APPLICANT
DATE

FORM LS-470
(3-86)
Edition of 7-84 obsolete.

VARIETY: Enduro, formerly FM40338

EXHIBIT A: Origin and Breeding History of the Variety

Enduro was developed using the pedigree method of breeding, from a Ferry-Morse cross made at San Juan Bautista, CA in July 1975 between 10C-X629MsC10Ms, a Ferry-Morse breeding line and UC82-1-3Ms from Davis, California. The parentage of 10C-X629...(Named E6201) included UC90-1, Roma VF, and Chico. UC82...was selected out of a cross of UC130 x UC122 at Davis.

F1 plants were compact, medium sized determinate with a heavy set of medium-small elongated (half-long) fruit which were uniformly green while immature. F2 seeds from several F1 plants were harvested from field row #42900 in October of 1976 at San Juan Bautista, California.

F2 plants in 1977 had very good crops of medium early maturing, firm and tough, square-round or pear fruit all uniform green while immature. There was obvious segregation for curly foliage and fruit shape. F3 seeds were harvested from five selected plants in field row #51681 in October of 1977 at San Juan Bautista, California.

F3 plant progenies of the five selected plants were noted in 1978, and the second progeny row had the best combination of fruit type, set, firmness and lab quality including high soluble solids. Nine single plant selections were harvested from this row #60294 in October of 1978. Segregation for fruit type occurred with square-round, half-long and pear shapes apparent.

In 1979 the F4 generation selections were evaluated near Los Mochis, Mexico. F5 seeds from 3 selected plants with pear fruit in row # 215 were massed in May. Row # 215 had been seeded with selections #3 and #4 from the 1978 harvest.

In 1980 the F5 generation plants had a very good set of very firm, pear fruit. Some F6 seeds were collected & massed from all 35 plants in row #76372 at San Juan Bautista, CA for more extensive trials.

In 1981 some segregation for shorter and longer pear fruit shapes was noted in the F6 generation at SJB. F7 seeds were harvested from three selected plants having longer pear type fruit in row #83558 at SJB.

In 1982 the F7 progeny from selection #1 looked the best (the least variable for pear shape). F8 seeds were harvested from five selected plants exhibiting the best pear shaped fruit in row #91828 at SJB.

In 1983 the F8 generation plants from selection #4 had an excellent crop of very uniform long pear fruit. F9 seeds were massed from all 35 plants in row #40338 at SJB. for trials and increase.

In 1984 and 1985 this line FM40338 was placed in yeild trials at San Juan Bautista, CA. FM40338 out yielded UC82B and Cannery Row each year. The pH and soluble solids were similar to Cannery Row but significantly higher than UC82B. The fruit firmness and interior color were similar to cannery row but considerably better than UC82B. The foliage was very similar to Cannery Row, coarse and very curly, compared to the fine non-curly foliage of UC82B. FM40338 had a larger vine and later maturity than Cannery Row and UC82B.

Seed increases of FM40338 were made in 1984 and 1985 consisting of 250 plants each year to provide seed for cannery trials. Each year the variety was found to be very uniform and stable with no obvious off-type plants or fruit. In 1986 a 4000 plant increase was again very uniform and stable with no obvious off type plants or fruit.

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VARIETY: Enduro, formerly FM40338

EXHIBIT "B": Novelty Statement

Enduro is most similar to Cannery Row, both of which were selected out of the same cross. Enduro can be easily distinguished from Roma VF since Enduro fruit is much firmer than Roma VF and Enduro foliage is very curly while Roma VF foliage is non-curly. Enduro can be distinguished from its female parent E6201, since E6201 fruit is soft like Roma VF and E6201 has leaf morphology type 2, whereas Enduro has leaf morphology type 1 (more finely divided). Also, E6201 has consistently more flowers per inflorescence than Enduro.

Enduro has the same vine type and fruit quality as Cannery Row but the fruit shape is different. Enduro has a true pear fruit shape while Cannery Row has a 1/2 long or deep square fruit shape. The length over diameter, L/D ratio, is an acceptable way of classifying most fruit types where:

0.95 to 1.05 = round
1.05 to 1.25 = square round
1.25 to 1.45 = 1/2 long
1.45 to 1.70 = pear or 3/4 long
1.70 to 2.00 = long

The L/D ratios in the following table were calculated on fruit from at least 50 plants for each variety, each year and each location.

Variety	Calif/85	Calif/86	Wis/85	Wis/86	Ave
Enduro	1.67	1.56	1.57	1.50	1.58
Cannery Row	1.38	1.35	1.32	1.33	1.34
E6201	1.62	1.59	1.42	1.48	1.53
UC82B	1.15	1.22	1.18	1.18	1.18

VARIETY: Enduro, formerly FM40338

EXHIBIT "B": Novelty Statement

Experimental Procedure: Plants of each variety to be compared were grown in adjacent rows. Each row consisted of 50 plants transplanted at one foot spacing with five feet between rows. The third fruit from the second or third inflorescence on each plant was measured for the L/D ratio data used in these comparisons.

When significant departures from a normal distribution of the data occurred, a non-parametric test, the Mann-Whitney U-test, was applied to test for significance of differences between the compared variety samples.

Summary of Results:

Trial #	Location & Year	L/D Ratio of Fruit		
		Enduro $\bar{x}$	Cannery Row $\bar{x}$	Difference of $\bar{x}$'s
1	San Juan Bautista CA, 1985	1.670	1.382	0.288
2	Sun Prairie WI, 1985	1.566	1.315	0.251
3	San Juan Bautista CA, 1986	1.562	1.348	0.214
4	Sun Prairie WI, 1986	1.497	1.332	0.165

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TRIAL 1 - SAN JUAN BAUTISTA, CALIFORNIA - ENDURO/CANNERY ROW

SEEDED 4/1/85, TRANSPLANTED 5/6/85

VARIABLE : FRUIT LENGTH/DIAMETER RATIO

	ENDURO	CANNERY ROW
MEAN	1.670	1.382
S2 = VARIANCE	0.024	0.010
S = STANDARD DEVIATION	0.156	0.099
ACTUAL OBSERVED RANGE	1.40 - 2.30	1.08-1.59
95% CONFIDENCE INTERVAL	1.63 - 1.71	1.35-1.41
COEFFICIENT OF VARIATION	9.34	7.16
DIFFERENCE OF MEANS	0.288	

TEST FOR HOMOGENEITY OF VARIANCE

F VALUE	2.40
PROBABILITY	0.0013406**

TEST FOR NORMALITY

SKEWNESS	1.1261	-0.4473
T VALUE	3.3456	-1.3288
PROBABILITY	0.0008**	0.0950
KURTOSIS	3.4651	1.0803
T VALUE	5.2350	1.6231
PROBABILITY	0.0000**	0.0545

MANN-WHITNEY TEST

TEST CRITERION (U)	681.0000
NORMAL DEVIATE (Z)	3.9240
PROBABILITY	0.0000**

* = SIGNIFICANCE AT THE 0.05 LEVEL OF PROBABILITY.

** = SIGNIFICANCE AT THE 0.01 OR LESS LEVEL OF PROBABILITY.

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TRIAL 2 - SUN PRARIE, WISCONSIN - ENDURO/CANNERY ROW

SEEDED 5/6/85, TRANSPLANTED 6/7/85

VARIABLE : FRUIT LENGTH/DIAMETER RATIO

	ENDURO	CANNERY ROW
MEAN	1.566	1.315
S2 = VARIANCE	0.009	0.007
S = STANDARD DEVIATION	0.096	0.085
ACTUAL OBSERVED RANGE	1.40 - 1.73	1.13 - 1.57
95% CONFIDENCE INTERVAL	1.54 - 1.59	1.29 - 1.34
COEFFICIENT OF VARIATION	6.13	6.46
DIFFERENCE OF MEANS	0.251	

TEST FOR HOMOGENEITY OF VARIANCE

F VALUE	1.29
PROBABILITY	0.18956

TEST FOR NORMALITY

SKEWNESS	0.2057	0.6658
T VALUE	0.6111	1.9781
PROBABILITY	0.2720	0.0268*
KURTOSIS	-0.1180	1.0563
T VALUE	-0.1783	1.5958
PROBABILITY	0.4296	0.0585

MANN-WHITNEY TEST

TEST CRITERION (U)	77.5000
NORMAL DEVIATE (Z)	8.1148
PROBABILITY	0.0000**

* = SIGNIFICANCE AT THE 0.05 LEVEL OF PROBABILITY.

** = SIGNIFICANCE AT THE 0.01 OR LESS LEVEL OF PROBABILITY.

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TRIAL 3 - SAN JUAN BAUTISTA, CALIFORNIA - ENDURO/CANNERY ROW

SEEDED 4/2/86, TRANSPLANTED 5/13/86

VARIABLE : FRUIT LENGTH/DIAMETER RATIO

	ENDURO	CANNERY ROW
MEAN	1.562	1.348
S2=VARIANCE	0.009	0.009
S=STANDARD DEVIATION	0.095	0.092
ACTUAL OBSERVED RANGE	1.36 - 1.88	1.12 - 1.63
95% CONFIDENCE INTERVAL	1.53 - 1.59	1.32 - 1.37
COEFFICIENT OF VARIATION	6.1	6.8
DIFFERENCE OF MEANS	0.214	

TEST FOR HOMOGENEITY OF VARIANCE

F VALUE	1.00
PROBABILITY	0.500

TEST FOR NORMALITY

SKEWNESS	0.4564	0.6729
T VALUE	1.3430	1.9991
PROBABILITY	0.0928	0.0256*
KURTOSIS	1.3462	1.4421
T VALUE	2.0150	2.1786
PROBABILITY	0.0248*	0.0171*

MANN-WHITNEY TEST

TEST CRITERION (U)	133.0000
NORMAL DEVIATE (Z)	7.5856
PROBABILITY	0.0000**

* = SIGNIFICANCE AT THE 0.05 LEVEL OF PROBABILITY.

** = SIGNIFICANCE AT THE 0.01 OR LESS LEVEL OF PROBABILITY.

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TRIAL 4 - SUN PRARIE, WISCONSIN - ENDURO/CANNERY ROW

SEEDED 5/5/86, TRANSPLANTED 5/30/86

VARIABLE: FRUIT LENGTH/DIAMETER RATIO

	ENDURO	CANNERY ROW
MEAN	1.497	1.332
S2 = VARIANCE	0.016	0.007
S = STANDARD DEVIATION	0.128	0.084
ACTUAL OBSERVED RANGE	1.21-1.81	1.05-1.48
95% CONFIDENCE INTERVAL	1.46-1.53	1.31-1.36
COEFFICIENT OF VARIATION	8.5	6.3
DIFFERENCE OF MEANS	0.165	

TEST FOR HOMOGENEITY OF VARIANCE

F VALUE	2.29
PROBABILITY	0.0022161**

TEST FOR NORMALITY

SKEWNESS	-0.067	-0.8552
T VALUE	-0.1983	-2.5406
PROBABILITY	0.4218	0.0071**
KURTOSIS	-0.0906	1.4349
T VALUE	-0.1369	2.1678
PROBABILITY	0.4458	0.0175*

MANN-WHITNEY TEST

TEST CRITERION (U)	361.500
NORMAL DEVIATE (Z)	6.1259
PROBABILITY	0.0000**

* = SIGNIFICANCE AT THE 0.05 LEVEL OF PROBABILITY

** = SIGNIFICANCE AT THE 0.01 OR LESS LEVEL OF PROBABILITY

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Tomato)

OBJECTIVE DESCRIPTION OF VARIETY

TOMATO *(Lycopersicon esculentum* Mill.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Ferry Morse Seed Company	FM 40338	Enduro

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
555 Codoni Avenue
Modesto, CA 95355

FOR OFFICIAL USE ONLY
PVPO NUMBER
8900204

Choose responses for the following characters which best fit your variety. Complete this form as fully as possible for best characterization of the variety. When a single quantitative value is requested (e.g., fruit weight), your answer should be the mean of an adequate-sized, unbiased sample of plants. Use leading zeroes when necessary (e.g., [0][9] or [0][8][1], etc.). The applicant variety should be compared with at least one well-known standard check variety of the same type (see list of recommended check varieties below), and grown in the same trials. The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse ____ or field X plantings. Trials direct-seeded X or transplanted X ; staked ____ or unstaked X . Give locations and dates of seeding and transplanting here: San Juan Bautista, CA seeded 5/7/85 // Sun Prairie, Wis seeded 5/6/85 tpl 6/7/85
San Juan Bautista, CA seeded 4/2/86 transplanted 5/13/86
Sun Prairie, Wis seeded 5/5/86 transplanted 5/30/86

COMPARISONS SHOULD BE MADE TO ONE OR MORE CHECK VARIETIES IN THE FOLLOWING LIST, IF AT ALL POSSIBLE. ENTER THE NUMBER OF THE CHECK IN BOXES WHERE IDENTITY OF CHECK IS REQUESTED.

1 = Ace 55 VF
2 = Campbell 37
3 = Chico III
4 = Flora Dade
5 = Florida MH-1
6 = Heinz 1350
7 = Homestead 24
8 = Marglobe
9 = Murietta
10 = New Yorker
11 = Ohio MR-13
12 = Red Cherry Large
13 = Red Rock
14 = Roma VF
15 = Rutgers
16 = Sunray
17 = Tropic
18 = UC 82
19 = VF 134
20 = US 28
21 = VF 145 B 7879
22 = Other *(Specify)* Cannery Row

1. SEEDLING:

[2] Anthocyanin in hypocotyl of 2-15 cm. seedling: 1 = Absent 2 = Present

[1] Habit of 3-4 week old seedling: 1 = Normal 2 = Compact

2. MATURE PLANT (at maximum vegetative development):

[ ][ ][ ] Cm. Height

[2] Growth: 1 = Indeterminate 2 = Determinate

[2] Form: 1 = Lax, open 2 = Normal 3 = Compact 4 = Dwarf 5 = Brachytic

[3] Size of canopy (compared to others of similar type): 1 = Small 2 = Medium 3 = Large

[1] Habit: 1 = Sprawling (decumbent) 2 = Semi-erect 3 = Erect ('Dwarf Champion')

3. STEM:

[2] Branching: 1 = Sparse ('Brehm's Solid Red', 'Fireball') 2 = Intermediate ('Westover') 3 = Profuse ('UC 82')

[ ] Branching at cotyledonary or first leafy node: 1 = Present 2 = Absent

[3] No. of nodes below the first inflorescence: 1 = 1-4 2 = 4-7 3 = 7-10 4 = 10 or more

[1] No. of nodes between early (1st - 2nd, 2nd - 3rd) inflorescences.

[1] No. of nodes between later-developing inflorescences.

[3] Pubescence on younger stems: 1 = Smooth (no long hairs) 2 = Sparsely hairy (scattered long hairs) 3 = Moderately hairy 4 = Densely hairy or wooly

4. LEAF (mature leaf beneath the 3rd inflorescence):

[1] Type: 1 = Tomato 2 = Potato ('Trip-L-Crop')

[1] Morphology *(choose illustration on pg. 5 of this form that is most similar)*

[3] Margins of major leaflets: 1 = Nearly entire 2 = Shallowly toothed or scalloped 3 = Deeply toothed or cut, esp. towards base

[4] Marginal rolling or wiltiness: 1 = Absent 2 = Slight 3 = Moderate 4 = Strong

[1] Onset of leaflet rolling: 1 = Early-season 2 = Mid-season 3 = Late season

10

4. LEAF (mature leaf beneath the 3rd inflorescence -- continued):

[1] Surface of major leaflets: 1 = Smooth 2 = Rugose (bumpy or veiny)

[2] Pubescence: 1 = Smooth (no long hairs) 2 = Normal 3 = Hirsute 4 = Wooly

5. INFLORESCENCE (make observations on 3rd inflorescence):

[1] Type: 1 = Simple 2 = Forked (2 major axes) 3 = Compound (much branched)

[0 6] Number of flowers in inflorescence, average

[1] Leafy or "running" inflorescences: 1 = Absent 2 = Occasional 3 = Frequent

6. FLOWER:

[1] Calyx: 1 = Normal, lobes awl-shaped 2 = Macrocalyx, lobes large, leaflike 3 = Fleshy

[1] Calyx-lobes: 1 = Shorter than corolla 2 = Approx. equalling corolla 3 = Distinctly longer than corolla

[1] Corolla color: 1 = Yellow 2 = Old gold 3 = White or tan

[ ] Style pubescence: 1 = Absent 2 = Sparse 3 = Dense

[1] Anthers: 1 = All fused into tube 2 = Separating into 2 or more groups at anthesis

[1] Fasciation (1st flower of 2nd or 3rd inflorescence): 1 = Absent 2 = Occasionally present 3 = Frequently present

7. FRUIT (3rd fruit of 2nd or 3rd cluster): *For the first 5 characters below, match your variety with the most similar illustration on pg. 5 of this form.*

[6] Typical fruit shape:

[1] Shape of transverse section:

[2] Shape of blossom end:

[1] Shape of stem end:

[1] Shape of pistil scar:

---

[1] Abscission layer: 1 = Present (pedicellate) 2 = Absent (jointless)

[2] Point of detachment of fruit at harvest: 1 = At pedicel joint 2 = At calyx attachment

[ ] mm length of pedicel (from joint to calyx attachment)

[0 7 0] mm length of mature fruit (stem axis)	[0 5 7]	mm length, check var. no.	[1 8]
[0 4 5] mm diameter of fruit at widest point	[0 4 8]	mm diameter, check var. no.	[1 8]
[0 7 8] g weight of mature fruit	[0 7 5]	g weight, check var. no.	[1 8]

[2] No. of locules: 1 = Two 2 = Three and four 3 = Five or more

[1] Fruit surface: 1 = Smooth 2 = Slightly rough 3 = Moderately rough or ribbed

[1] Fruit base color (mature-green stage): 1 = Light green ('Lanai', 'VF145-F5') 2 = Light gray-green ('Westover') 3 = Apple or medium green ('Heinz 1439 VF') 4 = Yellow green 5 = Dark green

[1] Fruit pattern (mature-green stage): 1 = Uniform green 2 = Green-shouldered 3 = Radial stripes on sides of fruit

[ ] Shoulder color if different from base: 1 = Dark green 2 = Grey green 3 = Yellow green

[5] Fruit color, full-ripe: 1 = White 2 = Yellow 3 = Orange 4 = Pink 5 = Red 6 = Brownish 7 = Greenish 8 = Other *(Specify)* _____

[3] Flesh color, full-ripe: 1 = Yellow 2 = Pink 3 = Red/Crimson 4 = Orange 5 = Other *(Specify)* _____

[1] Flesh color: 1 = Uniform 2 = With lighter and darker areas in walls

[2] Locular gel color of table-ripe fruit: 1 = Green 2 = Yellow 3 = Red

[2] Ripening: 1 = Blossom-to-stem end 2 = Uniform

7. FRUIT (3rd fruit of 2nd or 3rd cluster): Continued

[2] Ripening: 1 = Inside out 2 = Uniformly 3 = Outside in

[2] Epidermis color: 1 = Colorless 2 = Yellow

[1] Epidermis: 1 = Normal 2 = Easy-peel

[3] Epidermis texture: 1 = Tender 2 = Average 3 = Tough

[3] Thickness of pericarp . . . . . [3]

1 = Under 3 mm 2 = 3-6 mm 3 = 6-9 mm 4 = Over 9 mm

Thickness of pericarp, check var. no. [1][8]

[1] Stem scar size: 1 = Small ('Roma') 2 = Medium ('Rutgers') 3 = Large

[1] Core: 1 = Coreless (absent or smaller than 6x6 mm) 2 = Present

8. RESISTANCE TO FRUIT DISORDERS (Use code: 0 = Unknown, 1 = Susceptible, 2 = Resistant)

[1]	Blossom end rot	[2]	Catface	[2]	Fruit pox	[2]	Zippering
[0]	Blotchy ripening	[2]	Cracking, concentric	[2]	Gold fleck	[ ]	Other *(Specify)*
[0]	Bursting	[2]	Cracking, radial	[2]	Graywall		

9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant). NOTE: If claim of novelty is based wholly or in substantial part upon disease resistance, trial data should be appended. These should specify the method of testing, the reaction of the application variety, and reaction of well-known check varieties grown in the trial (identified by name).

VIRAL DISEASES:

[0]	Cucumber mosaic	[0]	Tobacco mosaic, Race 0	[0]	Tobacco mosaic, Race 2[2]
[0]	Curly top	[0]	Tobacco mosaic, Race 1	[0]	Tomato spotted wilt
[0]	Potato-Y virus	[0]	Tobacco mosaic, Race 2	[0]	Tomato yellows
[ ]	Other virus *(Specify)*				

BACTERIAL DISEASES:

[0]	Bacterial canker *(Corynebacterium michiganense)*	[0]	Bacterial spot *(Xanthomonas vesicatorium)*
[0]	Bacterial soft rot *(Erwinia carotovora)*	[0]	Bacterial wilt, *(Pseudomonas solanacearum)*
[0]	Bacterial speck *(Pseudomonas tomato)*	[ ]	Other bacterial disease *(Specify)*

FUNGAL DISEASES:

[0]	Anthracnose *(Colletotrichum* spp.*)*	[0]	Leaf mold, Race 1 *(Cladosporium fulvum)*
[1]	Brown root rot or corky root, *(Pyrenochaeta lycopersici)*	[0]	Leaf mold, Race 2
[0]	Collar rot or stem canker, *(Alternaria solani)*	[0]	Leaf mold, Race 3
[0]	Early blight defoliation, *(Alternaria solani)*	[ ]	Leaf mold, other races *(Specify)*
[2]	Fusarium wilt, Race 1, *(F. oxysporum f. lycopersici)*	[0]	Nailhead spot *(Alternaria tomato)*
[1]	Fusarium wilt, Race 2	[0]	Septoria leafspot *(S. lycopersici)*
[0]	Fusarium wilt, Race 3	[0]	Target leafspot *(Corynespora casiicola)*
[2]	Gray leaf spot *(Stemphylium* spp.*)*	[2]	Verticillium wilt, Race 1 *(V. albo-atrum)*
[0]	Late blight, Race 0, *(Phytophthora infestans)*	[0]	Verticillium wilt, Race 2
[0]	Late blight, Race 1	[2]	Other fungal disease Alternaria Stem Canker
		[2]	Other fungal disease Alternaria Black Mold

8900204

9. DISEASE AND PEST REACTION (Use code: 0 = Not tested, 1 = Susceptible, 2 = Resistant -- Continued)

INSECTS AND PESTS:

[0]	Colorado potato beetle *(Leptinotarsa decemlineata)*	[0]	Tomato hornworm *(Manduca quinquemaculata)*
[0]	Southern root knot nematode *(Meloidogyne incognita)*	[0]	Tomato fruitworm *(Heliothis zea)*
[0]	Spider mites *(Tetranychus spp.)*	[0]	Whitefly *(Trialeurodes vaporariorum)*
[0]	Sugar beet army worm *(Spodoptera exigua)*	[ ]	Other *(Specify)* _____
[0]	Tobacco flea beetle *(Epitrix hirtipennis)*		_____

POLLUTANTS:

[0]	Ozone	[0]	Sulfur dioxide	[ ]	Other *(Specify)* _____

10. CHEMISTRY AND COMPOSITION OF FULL-RIPE FRUITS: Suggested test methods may be found in "Tomato Products," 5th ed., National Canners Assn. Bull. 27-L. Please specify test methods or give a reference to methods used. Fill in table below with values for the new variety and for at least one well-known check variety of similar type grown in the same trial. Specify names or numbers of check varieties.

	SUBMITTED VARIETY	Check Variety E6201	Check Variety 18 UC82B	Check Variety 22 Cannery Row
	1985 ave 1986	1985 ave 1986	1985 ave 1986	1985 ave 1986
pH San Juan Bautista, CA	4.54 4.46 **4.50**	4.52 4.50 **4.51**	4.38 4.36 **4.37**	4.55 4.50 **4.52**
Titratable acidity, as % citric				
Total solids (dry matter, seeds and skin removed)				
Soluble solids, as °Brix SJB	4.6 5.0 **4.8**	4.1 4.5 **4.3**	4.6 4.2 **4.4**	4.6 5.0 **4.8**

11. PHENOLOGY: Express length of developmental stages either as calendar days or as heat units (growing degree days), in degrees Celsius. If heat units are used, indicate the base temperature used in their calculation here _____ °C. See paper by Warnock under "References" for method. Give comparative data for at least one check variety; identify checks by name or by number from table on page 1.

	APPLICATION VARIETY	Check variety E6201	Check variety 18 UC82B	Check variety 22 Cannery Row
	SJB ave Wis	SJB ave Wis	SJB ave Wis	SJB ave Wis
Seeding to 50% flower (1 open flower on 50% of plants) 1986	59 64 **61.5 days**	59 62 **60.5 days**	55 57 **56 days**	58 62 **60 days**
Seed to once-over harvest *(if applicable)*				

[3] Fruiting season: 1 = Long ('Marglobe') 2 = Medium ('Westover') 3 = Short, concentrated ('VF 145') 4 = Very concentrated ('UC 82')

[3] Relative maturity in areas tested: 1 = Early 2 = Medium early 3 = Medium 4 = Medium late 5 = Late 6 = Variable (if relative maturity is known to differ by location or environment, please explain on separate sheet).

12. ADAPTATION: If more than one category applies, list all in rank order.

[0][1] Culture: 1 = Field 2 = Greenhouse

[0][3][0][4] Principal use(s): 1 = Home garden 2 = Fresh market 3 = Whole-pack canning 4 = Concentrated products 5 = Other *(Specify)* _____

[2] Machine harvest: 1 = Not adapted 2 = Adapted

[0][9][1] Regions to which adaptation has been demonstrated:
1 = Northeast 2 = Mid Atlantic 3 = Southeast 4 = Florida
5 = Great Plains 6 = South-central 7 = Intermountain West 8 = Northwest
9 = California: Sacramento and Upper San Joaquin Valley
10 = California: Coastal areas 11 = California: Southern San Joaquin Valley & deserts

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VARIETY: Enduro, formerly FM40338

EXHIBIT "D": Additional Description of the Variety

Enduro exhibits a large determinate vine with dark yellow green foliage that is distinctly more curled or rolled than the foliage of UC82B. Flowering of Enduro begins 4 to 7 days later than UC82B primarily because the first inflorescence occurs one node later on Enduro plants. For some plants the main stem terminates with the second inflorescence.

The mature fruit is true pear shape with an L/D ratio of 1.57 compared to 1.34 for Cannery Row, and 1.18 for UC82B. The fruit exhibits no green shoulder while immature and has a very small stem scar averaging 3.9 mm compared to 5.6 mm for Cannery Row and 6.2 for UC82B. The ripe fruit is very firm with tough skin that is very resistant to black mold, Alternaria alternata, which can be very prevalent on fruit of VF145B 7879. The pH and soluble solids of Enduro were similar to Cannery Row but distinctly higher than for UC82B.

EXHIBIT "E"

Plant Variety Protection Application

No: 8900204

ASSIGNMENT

I, Courtland G. Nichols, agree and hereby do transfer and assign to FERRY-MORSE SEED COMPANY all of my rights, title, and interest in and to that certain variety namely, Enduro (formerly FM40338), for which application for Plant Variety Protection Certificate has been filed. This agreement shall be binding on my administrators, successors and assigns.

In Witness Whereof, I have executed this agreement this 30th day of March, 1989.

BREEDER

Courtland G. Nichols

EXHIBIT "E"

Plant Variety Protection Application

No: 8900204

STATEMENT OF OWNERSHIP

I, George R. Allbritten, Secretary of Ferry-Morse Seed Company do hereby certify that Ferry-Morse Seed Company is the breeder and owner of that certain variety namely, Tomato, Enduro

for which an application for Plant Variety Protection has been filed.

In witness whereof I have executed this statement of ownership and caused the Ferry-Morse Corporate Seal to be affixed this 27 day of April, 1990.

Secretary

SEAL